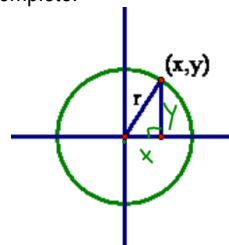


11.7 Notes

Equations of Circles

Use Pythagorean Theorem to complete:

$$r^2 = \underline{x^2} + \underline{y^2}$$

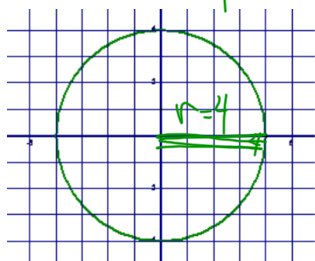


This is the equation for a circle centered at the

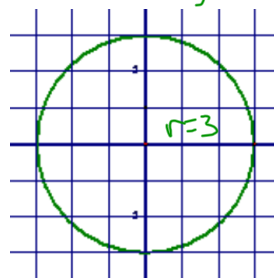
origin .

Write the equation for the following circles:

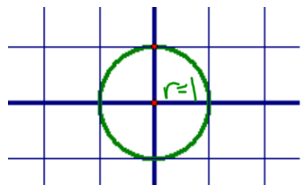
1. $16 = x^2 + y^2$



2. $9 = x^2 + y^2$

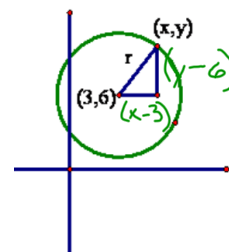


3. $1 = x^2 + y^2$



Use Pythagorean Theorem to complete:

$$r^2 = \underline{(x-3)^2} + \underline{(y-6)^2}$$



$$r^2 = (x-h)^2 + (y-k)^2$$

This is the **equation of a circle in standard form**

$$C(h,k)$$

Given the equation, what is the center and radius?

$$25 = (x-3)^2 + (y-8)^2$$

1. C(3) 8 5

$$16 = (x + 5)^2 + (y - 2)^2$$

2. C(-5) 4

$$36 = x^2 + y^2$$

3. C(0) 6

$$81 = (x - 12)^2 + (y + 10)^2$$

4. C(12) 9

Given the center and radius, write the equation

5. C(5, 2) r = 3

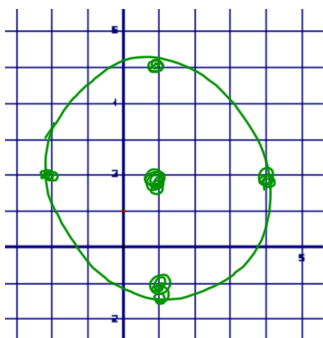
$$9 = (x - 5)^2 + (y - 2)^2$$

6. C(-3, 6) r = 7

$$49 = (x + 3)^2 + (y - 6)^2$$

7. C(8, 0) r = 10

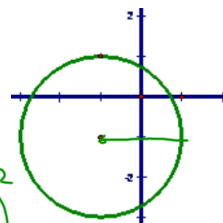
$$100 = (x - 8)^2 + y^2$$

Graph #5 $C(1,2) \quad r=3$ 

8. Use the picture to the right. What is the equation?

 $C(-1) r = 2$

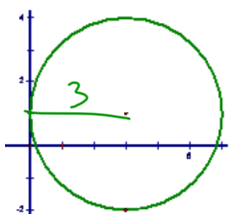
$$4 = (x+1)^2 + (y+1)^2$$



9. Use the picture to the right. What is the equation?

 $C(3) r = 3$

$$9 = (x-3)^2 + (y-1)^2$$

**HW**

p.629-632

2-12, 16-18, 22-25